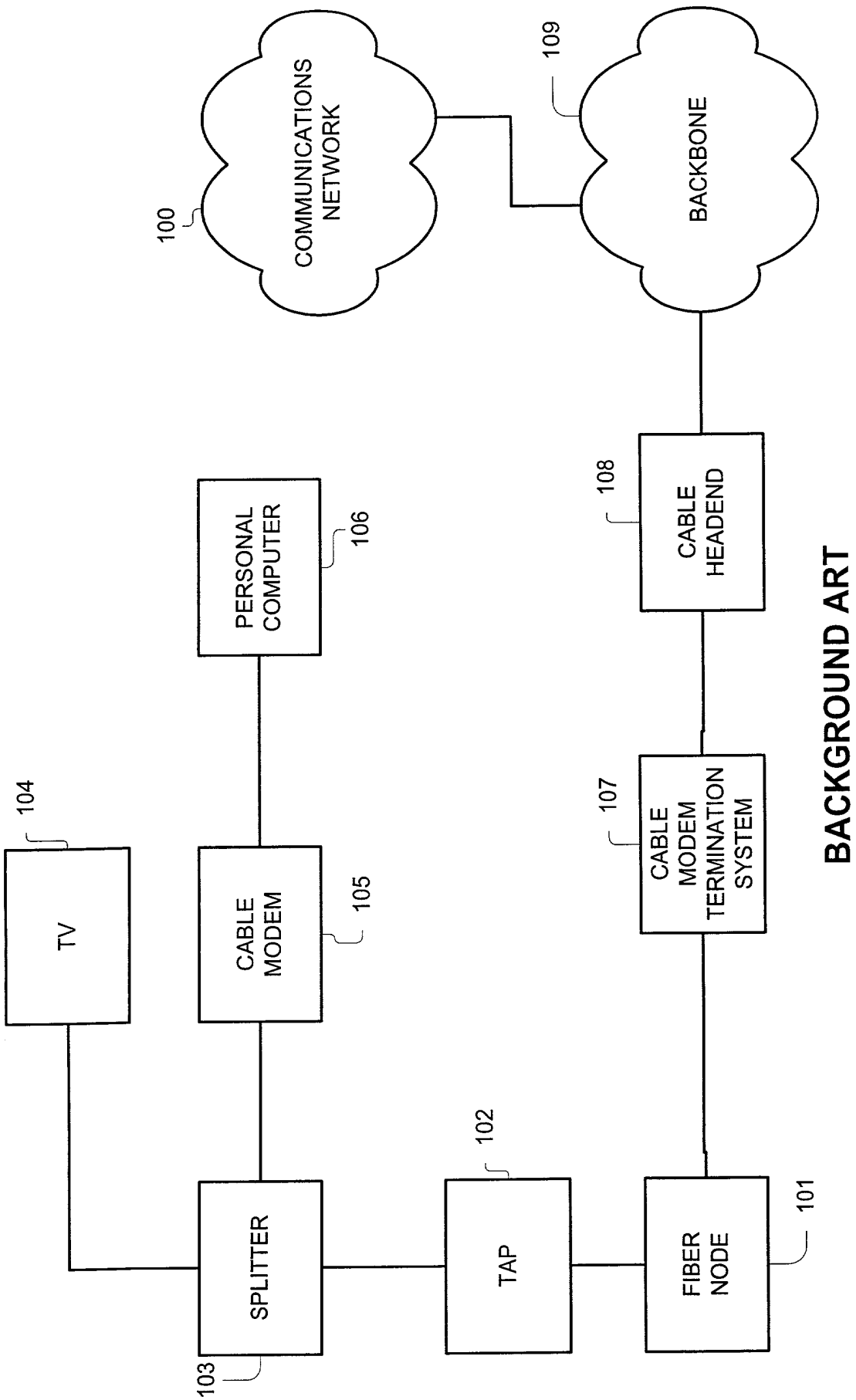
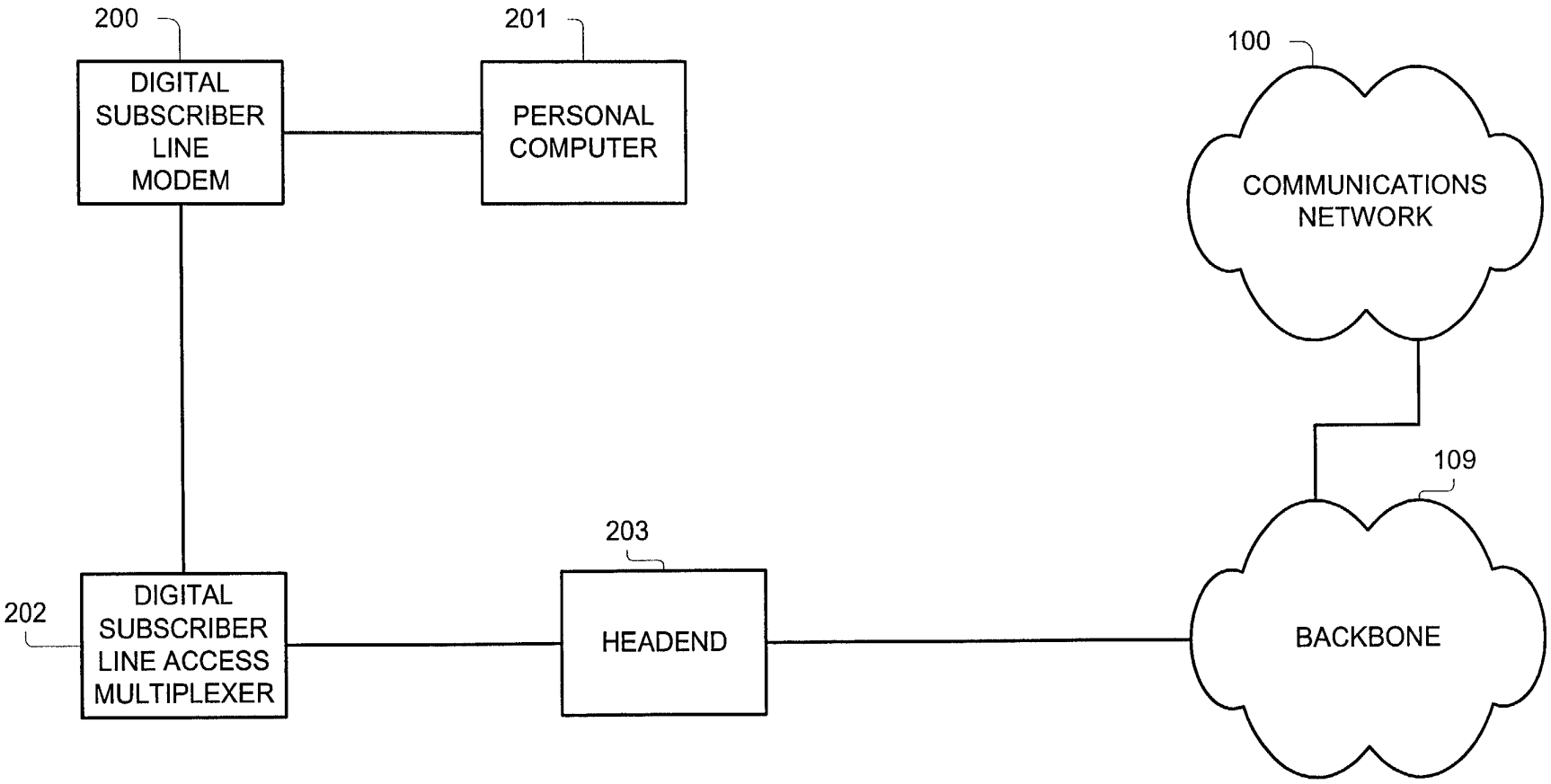
FIGURE 1



BACKGROUND ART

TO97T20 S20H8260

FIGURE 2



BACKGROUND ART

FIGURE 3

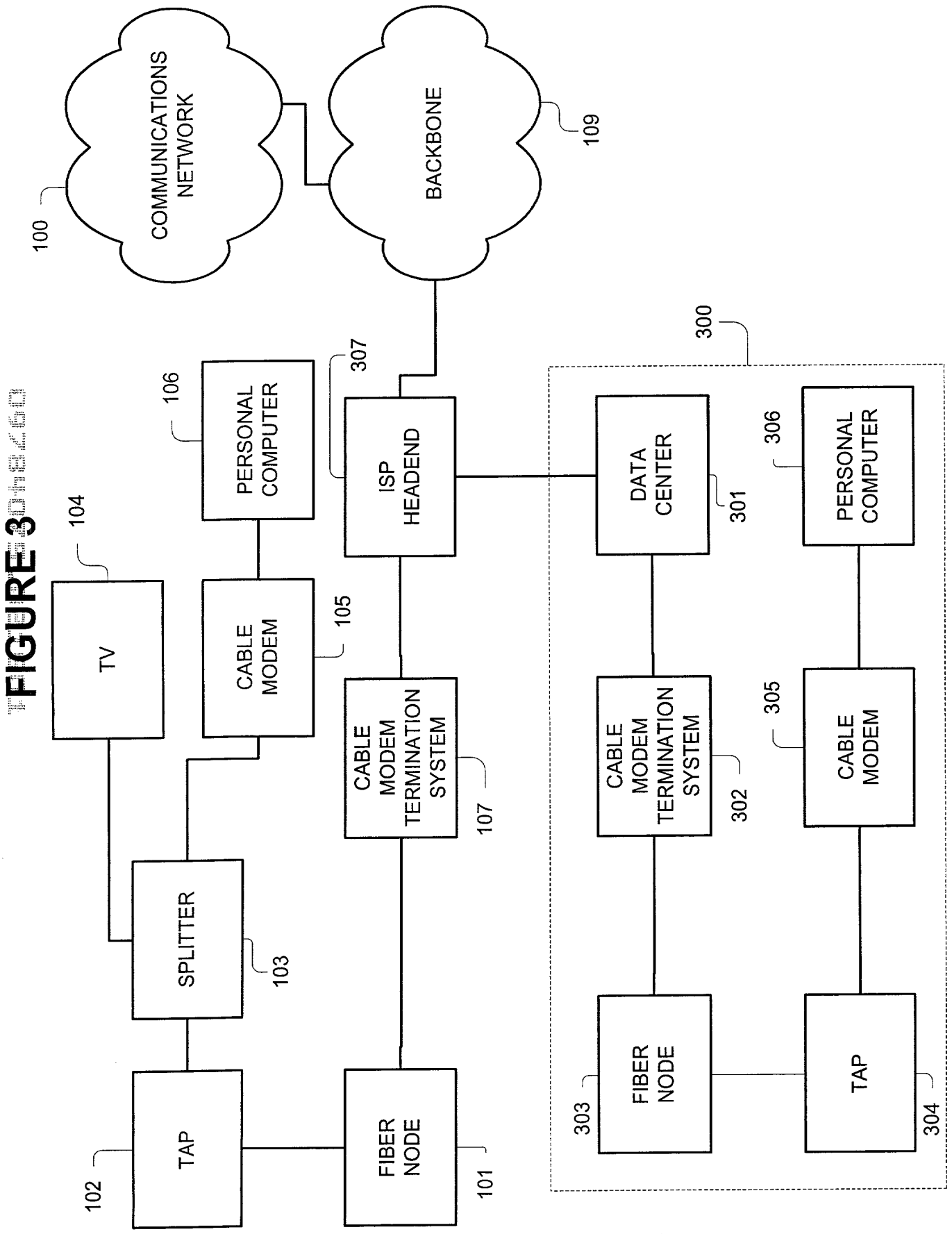

COMMUNICATIONS NETWORK
100
BACKBONE
109
300
307
PERSONAL COMPUTER
106
ISP HEADEND
DATA CENTER
301
306
PERSONAL COMPUTER
104
TV
CABLE MODEM
105
CABLE MODEM TERMINATION SYSTEM
107
CABLE MODEM TERMINATION SYSTEM
302
305
CABLE MODEM
SPLITTER
103
TAP
102
FIBER NODE
101
FIBER NODE
303
TAP
304

FIGURE 4

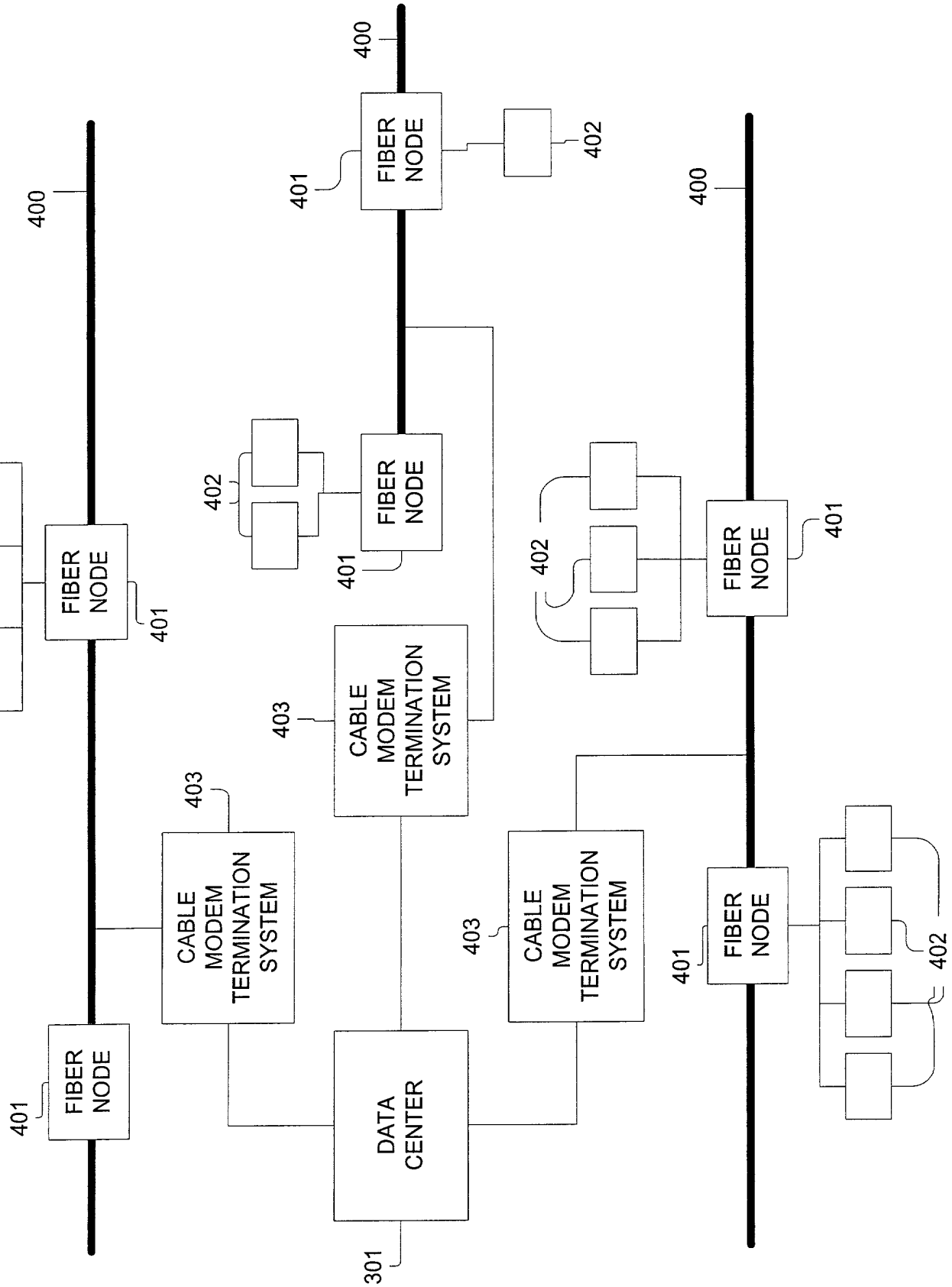

400
FIBER NODE
401
402
CABLE MODEM TERMINATION SYSTEM
403
DATA CENTER
301

FIGURE 5

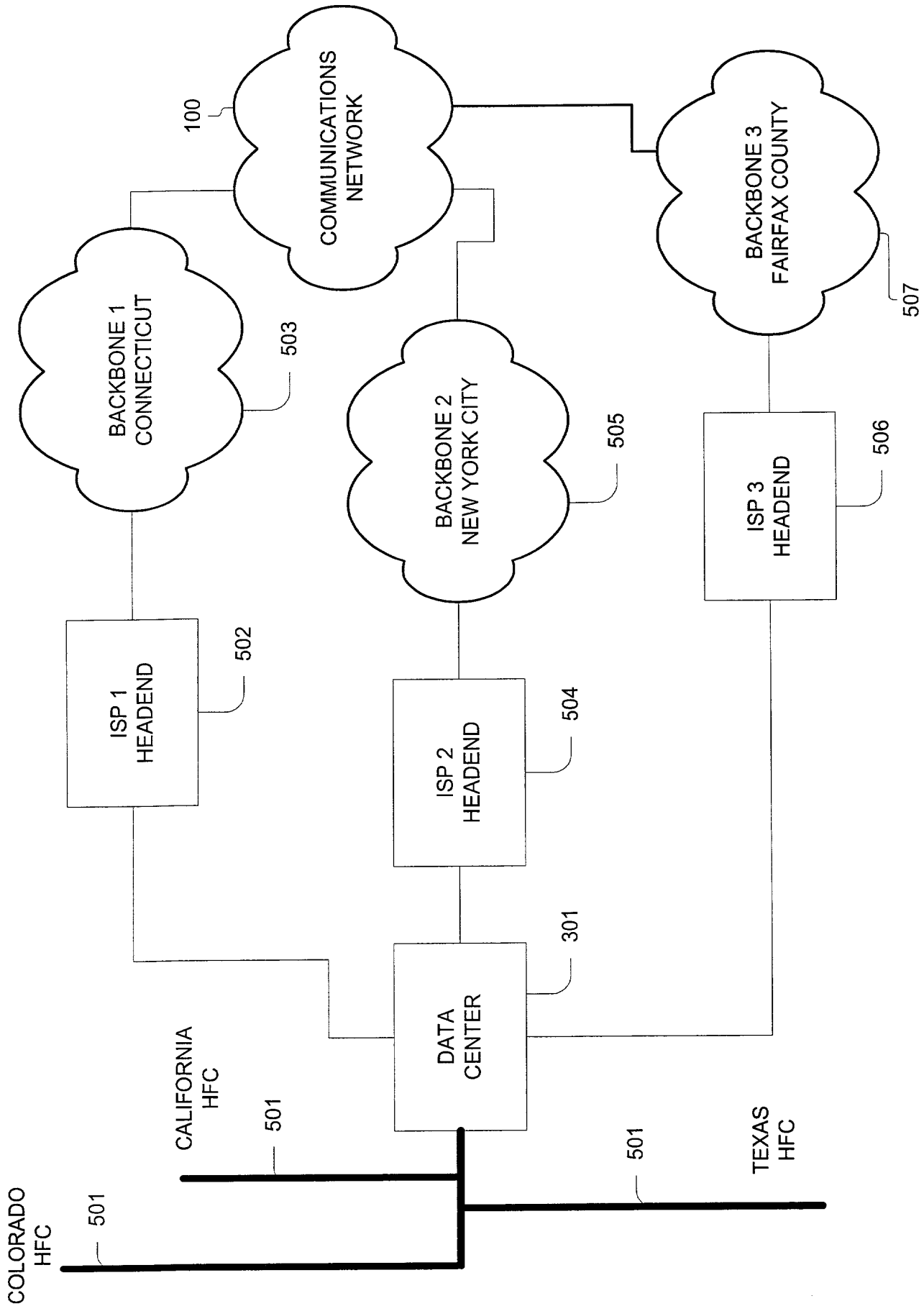

100
COMMUNICATIONS NETWORK
BACKBONE 1 CONNECTICUT
503
BACKBONE 2 NEW YORK CITY
505
BACKBONE 3 FAIRFAX COUNTY
507
ISP 1 HEADEND
502
ISP 2 HEADEND
504
ISP 3 HEADEND
506
DATA CENTER
301
COLORADO HFC
501
CALIFORNIA HFC
501
501
TEXAS HFC

FIGURE 6

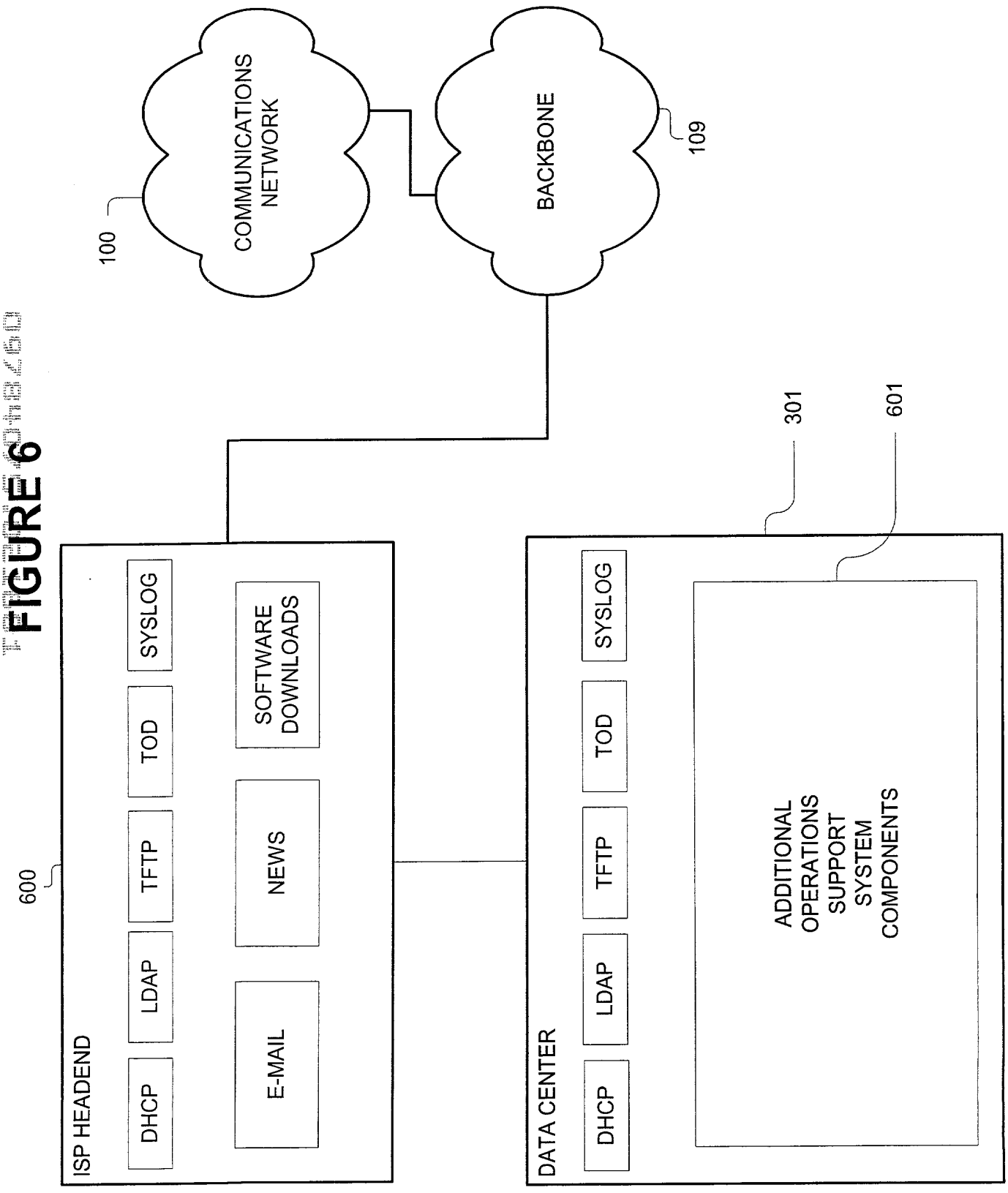

COMMUNICATIONS NETWORK
100
BACKBONE
109
600
ISP HEADEND
DHCP
LDAP
TFTP
TOD
SYSLOG
E-MAIL
NEWS
SOFTWARE DOWNLOADS
301
601
DATA CENTER
DHCP
LDAP
TFTP
TOD
SYSLOG
ADDITIONAL OPERATIONS SUPPORT SYSTEM COMPONENTS

FIGURE 7

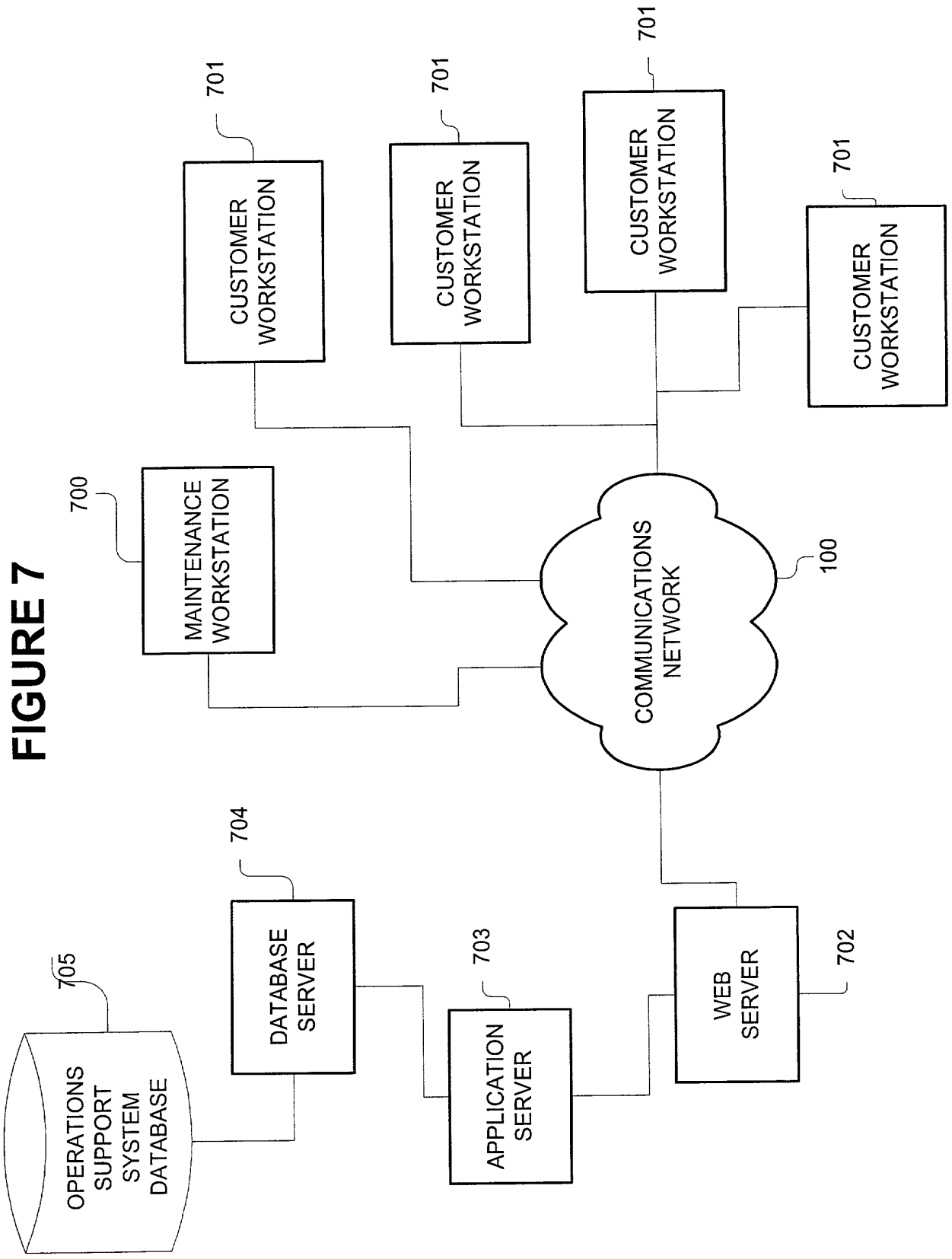

701
CUSTOMER WORKSTATION
701
CUSTOMER WORKSTATION
701
CUSTOMER WORKSTATION
701
CUSTOMER WORKSTATION
700
MAINTENANCE WORKSTATION
COMMUNICATIONS NETWORK
100
704
DATABASE SERVER
703
APPLICATION SERVER
WEB SERVER
702
705
OPERATIONS SUPPORT SYSTEM DATABASE

FIGURE 8

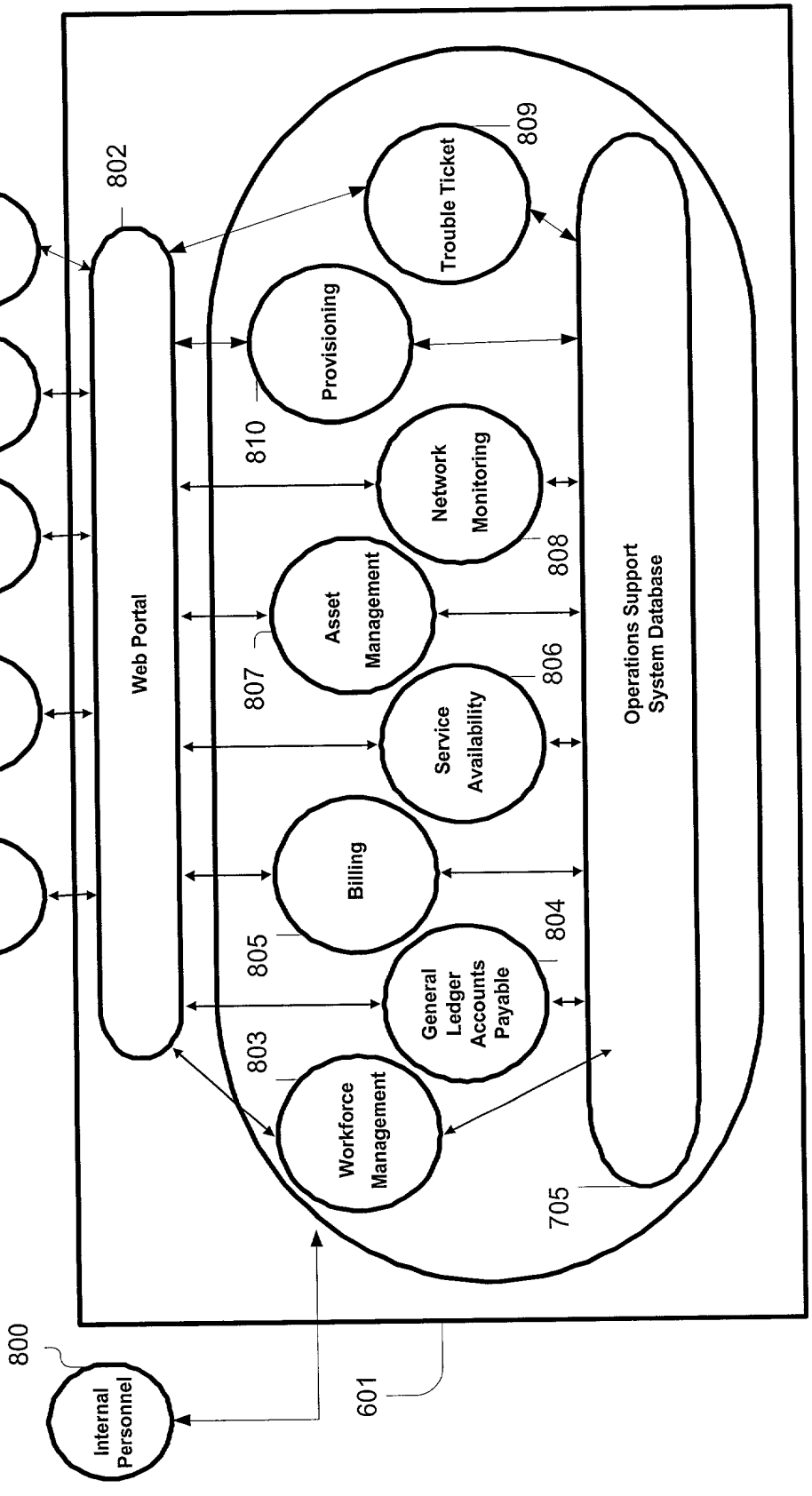

800
Internal Personnel
601
705
Operations Support System Database
Web Portal
802
811
End-User
800
Internal Personnel
801
Customer
801
Customer
801
Customer
803
Workforce Management
805
Billing
804
General Ledger Accounts Payable
806
Service Availability
807
Asset Management
808
Network Monitoring
810
Provisioning
809
Trouble Ticket

FIGURE 9

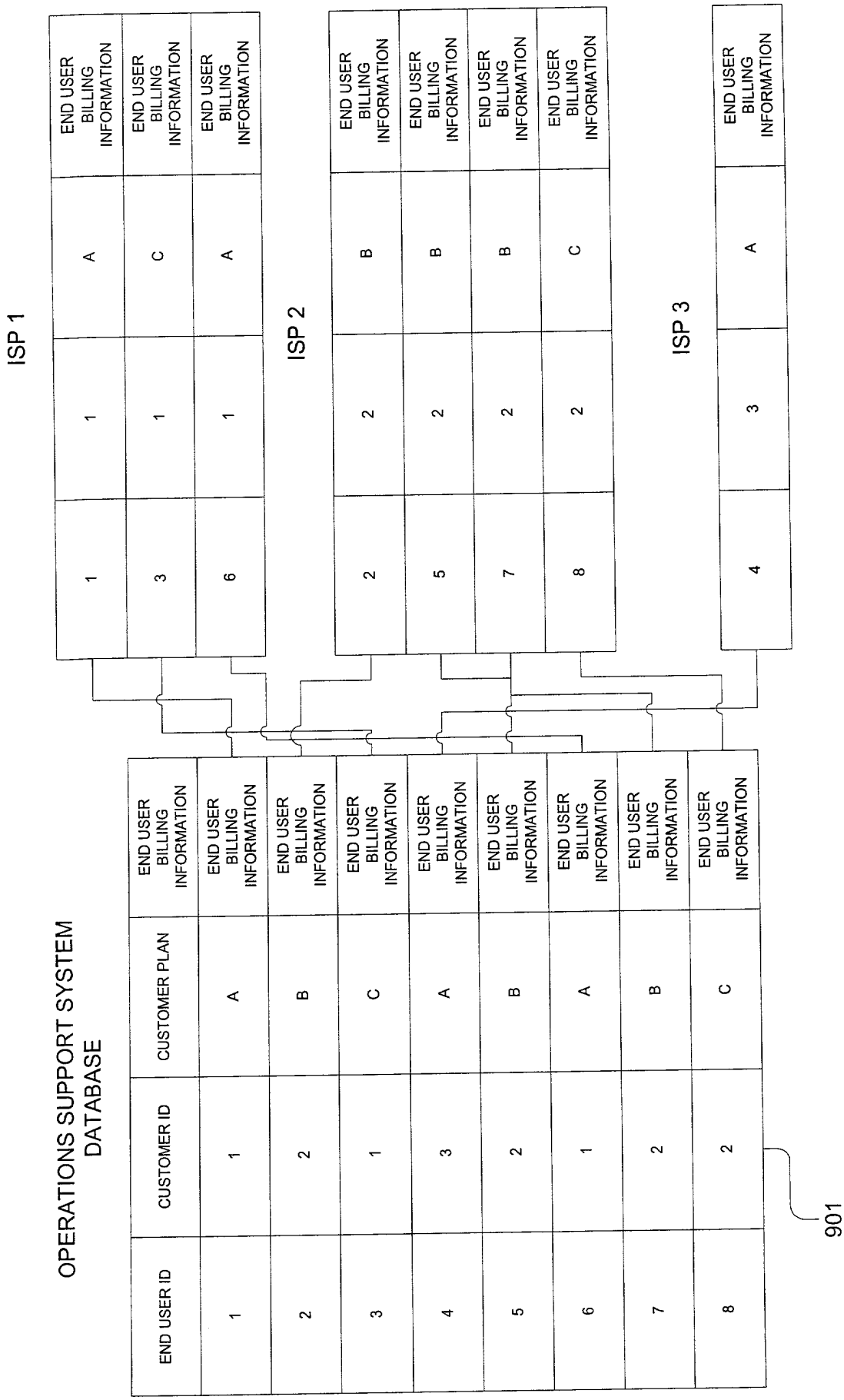

OPERATIONS SUPPORT SYSTEM DATABASE
END USER ID
CUSTOMER ID
CUSTOMER PLAN
END USER BILLING INFORMATION
1
2
3
4
5
6
7
8
A
B
C
901
ISP 1
ISP 2
ISP 3

FIGURE 10

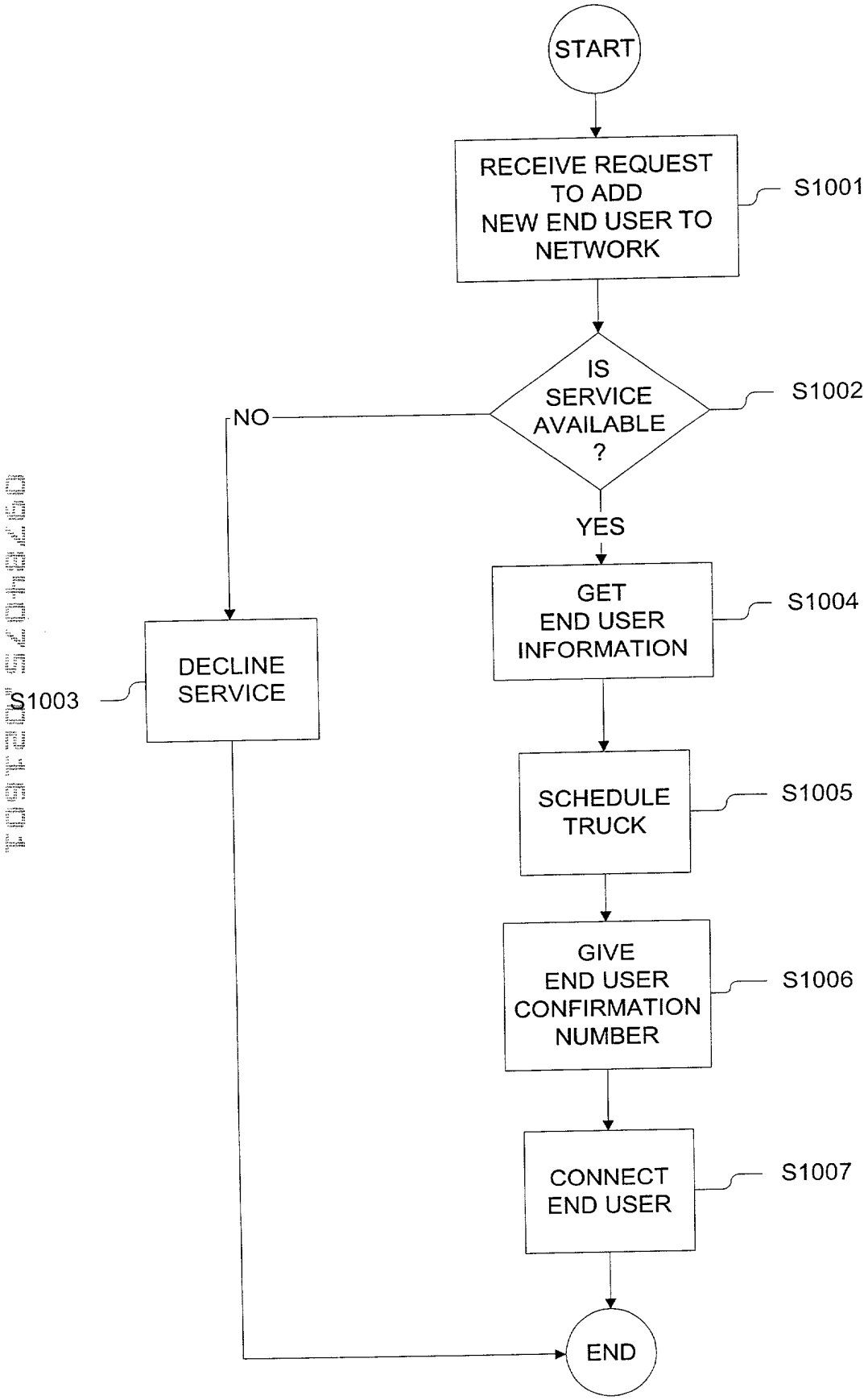

START
RECEIVE REQUEST TO ADD NEW END USER TO NETWORK
S1001
IS SERVICE AVAILABLE ?
S1002
NO
YES
DECLINE SERVICE
S1003
GET END USER INFORMATION
S1004
SCHEDULE TRUCK
S1005
GIVE END USER CONFIRMATION NUMBER
S1006
CONNECT END USER
S1007
END

FIGURE 11

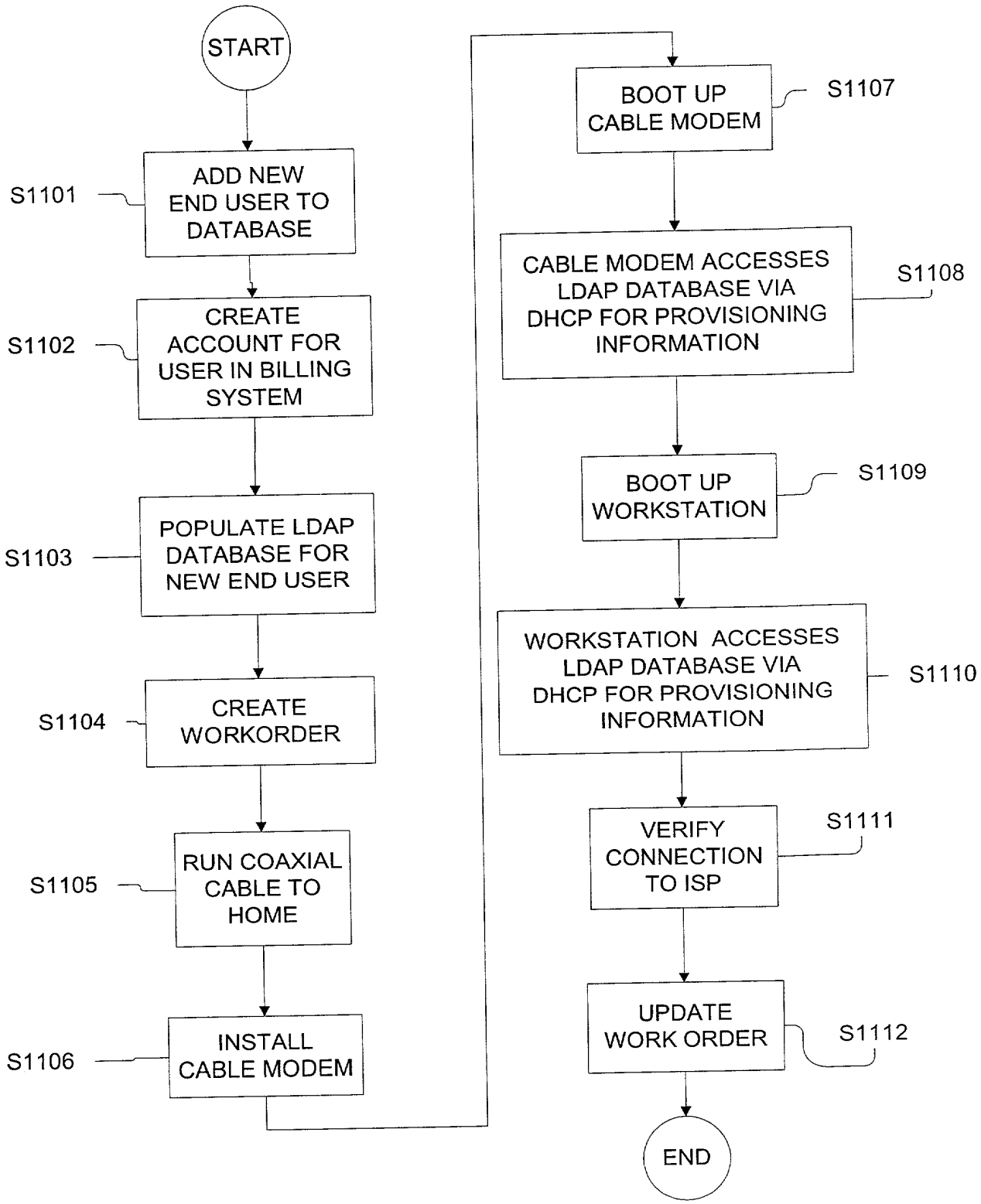

START
S1101
ADD NEW END USER TO DATABASE
S1102
CREATE ACCOUNT FOR USER IN BILLING SYSTEM
S1103
POPULATE LDAP DATABASE FOR NEW END USER
S1104
CREATE WORKORDER
S1105
RUN COAXIAL CABLE TO HOME
S1106
INSTALL CABLE MODEM
S1107
BOOT UP CABLE MODEM
S1108
CABLE MODEM ACCESSES LDAP DATABASE VIA DHCP FOR PROVISIONING INFORMATION
S1109
BOOT UP WORKSTATION
S1110
WORKSTATION ACCESSES LDAP DATABASE VIA DHCP FOR PROVISIONING INFORMATION
S1111
VERIFY CONNECTION TO ISP
S1112
UPDATE WORK ORDER
END

FIGURE 12

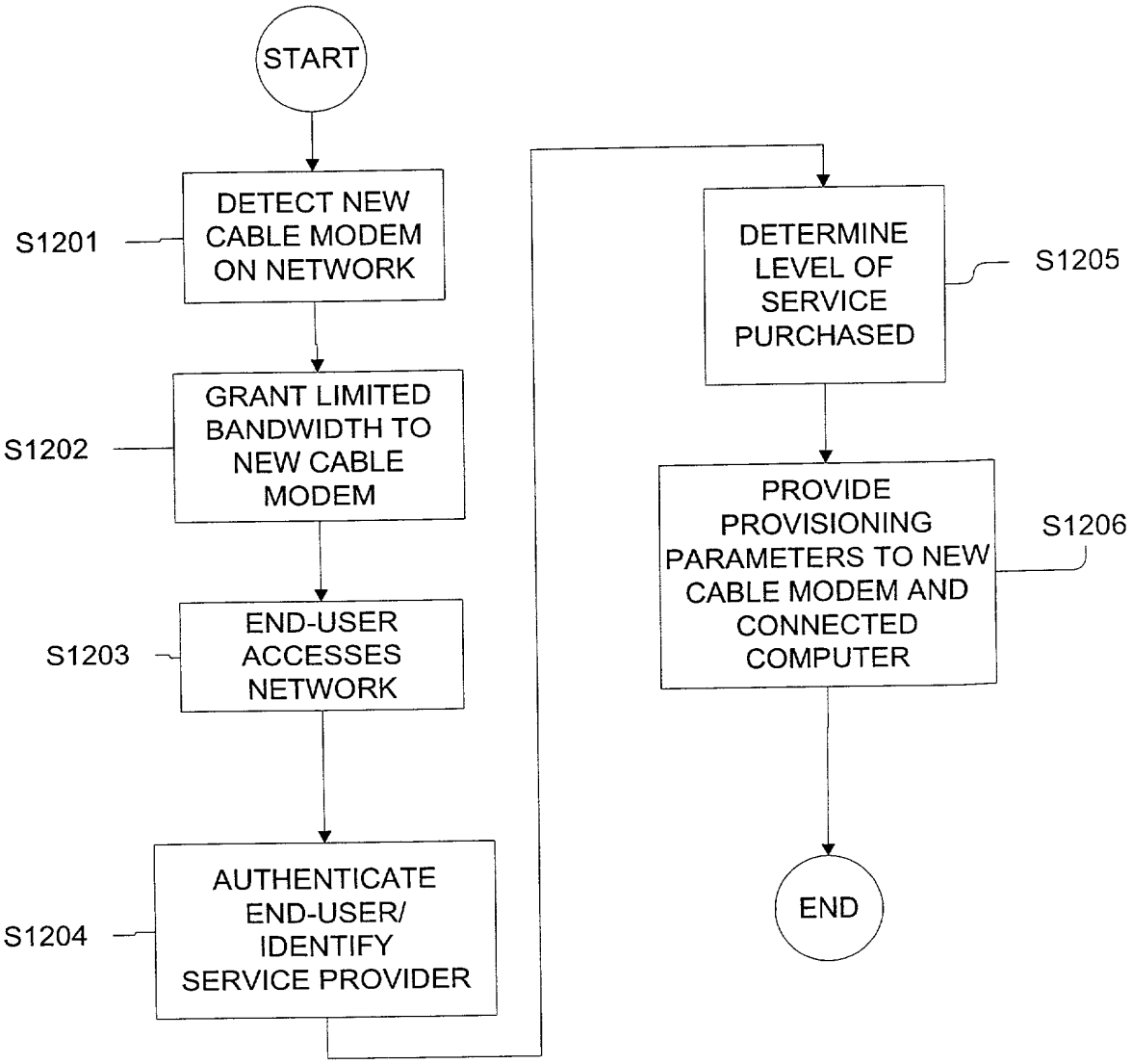


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FIGURE 13

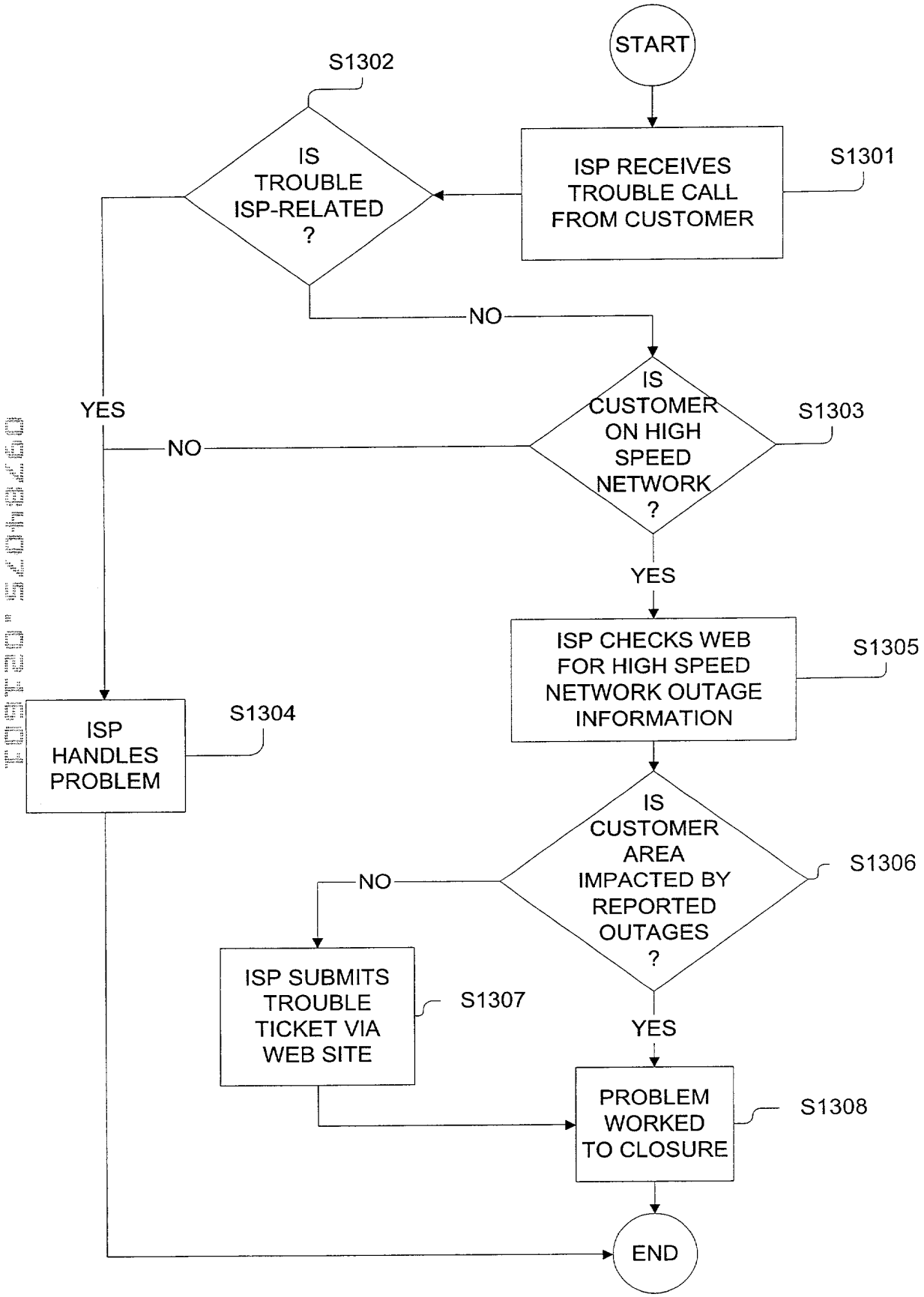

START
ISP RECEIVES TROUBLE CALL FROM CUSTOMER
S1301
IS TROUBLE ISP-RELATED ?
S1302
NO
YES
IS CUSTOMER ON HIGH SPEED NETWORK ?
S1303
NO
YES
ISP CHECKS WEB FOR HIGH SPEED NETWORK OUTAGE INFORMATION
S1305
ISP HANDLES PROBLEM
S1304
IS CUSTOMER AREA IMPACTED BY REPORTED OUTAGES ?
S1306
NO
YES
ISP SUBMITS TROUBLE TICKET VIA WEB SITE
S1307
PROBLEM WORKED TO CLOSURE
S1308
END

FIGURE 14

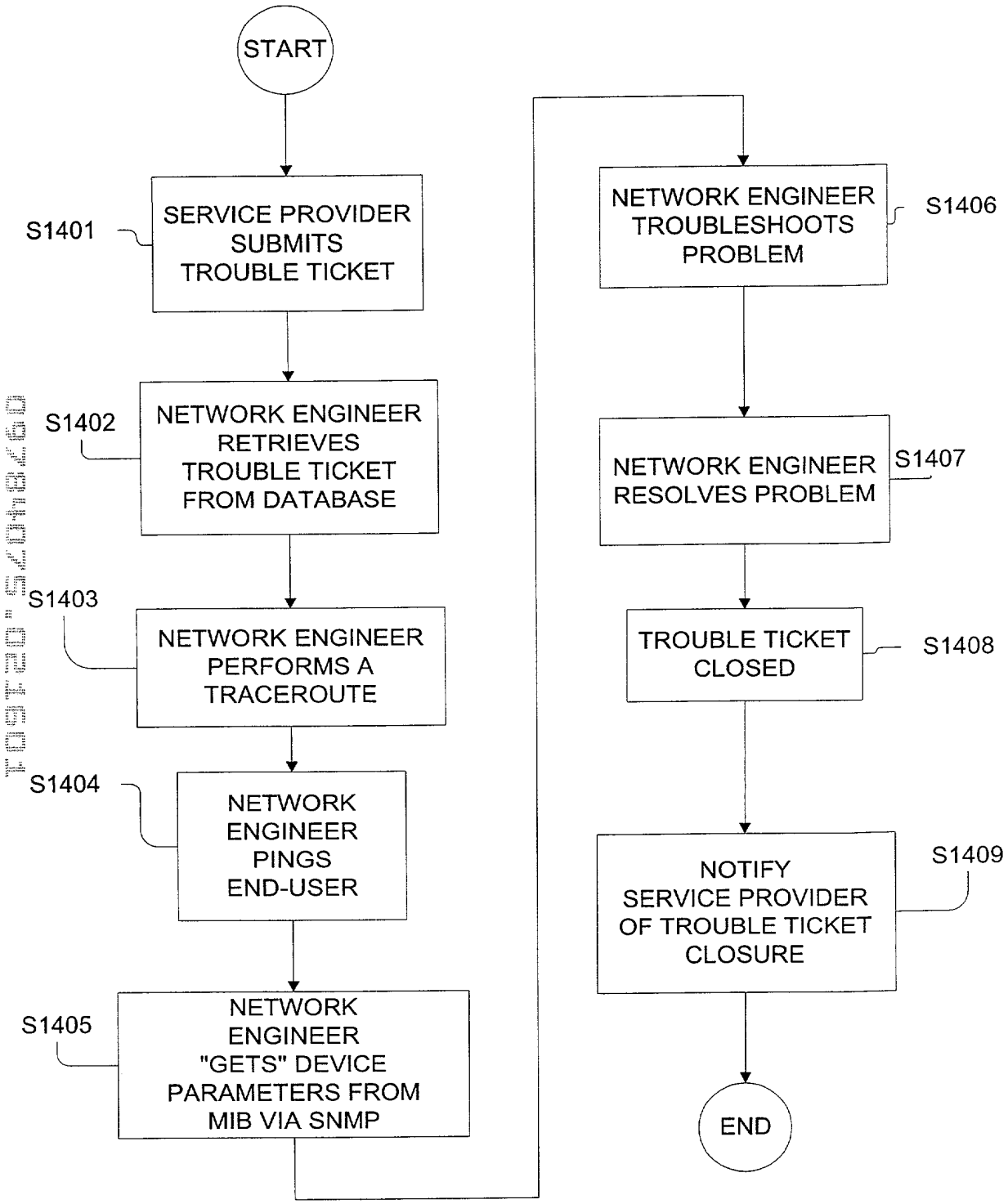
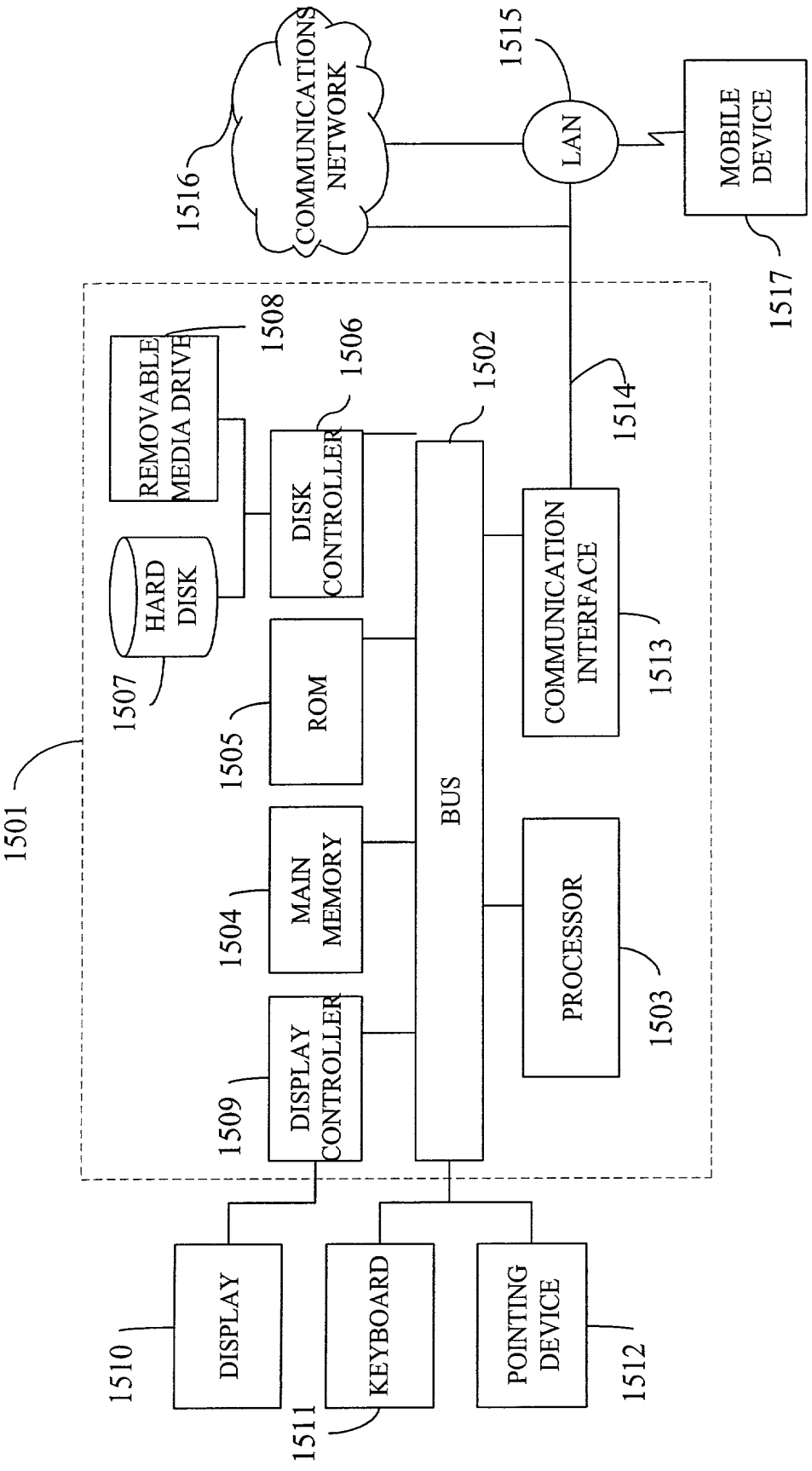

START
S1401
SERVICE PROVIDER SUBMITS TROUBLE TICKET
S1402
NETWORK ENGINEER RETRIEVES TROUBLE TICKET FROM DATABASE
S1403
NETWORK ENGINEER PERFORMS A TRACEROUTE
S1404
NETWORK ENGINEER PINGS END-USER
S1405
NETWORK ENGINEER "GETS" DEVICE PARAMETERS FROM MIB VIA SNMP
S1406
NETWORK ENGINEER TROUBLESHOOTS PROBLEM
S1407
NETWORK ENGINEER RESOLVES PROBLEM
S1408
TROUBLE TICKET CLOSED
S1409
NOTIFY SERVICE PROVIDER OF TROUBLE TICKET CLOSURE
END

FIGURE 15


1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
BUS
PROCESSOR
MAIN MEMORY
ROM
DISK CONTROLLER
HARD DISK
REMOVABLE MEDIA DRIVE
DISPLAY CONTROLLER
COMMUNICATION INTERFACE
DISPLAY
KEYBOARD
POINTING DEVICE
LAN
COMMUNICATIONS NETWORK
MOBILE DEVICE